

AMENDMENTS TO THE CLAIMS

1. (*original*) A method for treating zirconium metal, the method comprising chemically depassivating the zirconium metal.
2. (*original*) A method for treating zirconium sponge, the method comprising chemically depassivating the zirconium sponge to form treated zirconium sponge.
3. (*original*) A method as claimed in claim 2 wherein the zirconium sponge is chemically depassivated by treatment with a source of fluoride ions.
4. (*original*) A method as claimed in claim 3 wherein the source of fluoride ions is an acidified solution containing fluoride ions.
5. (*original*) A method as claimed in claim 3 wherein the source of fluoride ions is hydrofluoric acid.
6. (*original*) A method for treating zirconium sponge, the method comprising treating the zirconium sponge with a solution containing fluoride ions to form treated zirconium sponge.
7. (*currently amended*) Treated zirconium sponge prepared by a method as claimed in [~~any one of claims 2-6~~] claim 2.

8. (*original*) Zirconium sponge comprising an agglomerate of zirconium particles and having a surface layer containing fluorine containing compounds at least partially coating at least some of the particles.

9. (*original*) Zirconium sponge as claimed in claim 8 wherein fluorine containing compounds are zirconium fluoride compounds.

10. (*original*) Zirconium sponge as claimed in claim 9 wherein the zirconium fluoride compounds have the formula $Zr_xF_y \cdot nH_2O$.

11. (*currently amended*) A method of manufacturing a magnesium-zirconium master alloy, the method comprising the steps of:

- (a) mixing treated zirconium sponge as claimed in claim 7 [~~or zirconium sponge as claimed in any one of claims 8-10~~] with molten magnesium/magnesium alloy to form a magnesium-zirconium melt containing dissolved zirconium and zirconium particles; and
- (b) casting the magnesium-zirconium melt to solidify as the magnesium-zirconium master alloy.

12. (*original*) A magnesium-zirconium master alloy manufactured by a method as claimed in claim 11.

13. (*original*) A magnesium-zirconium master alloy as claimed in claim 12 containing 10-50% by weight zirconium.

14. (*original*) A magnesium-zirconium master alloy as claimed in claim 12 containing 20-40% by weight zirconium.

15. (*currently amended*) A magnesium-zirconium master alloy as claimed in [~~any one of claims 12-14~~] **claim 12**, wherein 90% of the zirconium particles are sized less than 5 μ m.

16. (*original*) A magnesium-zirconium master alloy containing dissolved zirconium and zirconium particles in the substantial absence of halide inclusions, wherein 90% of the zirconium particles are sized less than 5 μ m.

17. (*currently amended*) A magnesium-zirconium master alloy as claimed in claim 15 [~~or claim 16~~] wherein 90% of the zirconium particles are sized less than 3 μ m.

18. (*currently amended*) A method of adding zirconium as an alloying element to molten magnesium/magnesium alloy, the method comprising mixing treated zirconium sponge as claimed in claim 7 [~~or zirconium sponge as claimed in any one of claims 8-10~~] with the molten
5 magnesium/magnesium alloy.

19. (*currently amended*) A method of adding zirconium as an alloying element to molten magnesium/magnesium alloy, the method comprising mixing a magnesium-zirconium master alloy as claimed in claim 12 [~~any one of claims 12-17~~] with the molten
5 magnesium/magnesium alloy.

20. (*currently amended*) A magnesium alloy containing zirconium prepared by a method as claimed in claim 18 [~~or claim 19~~].